

## PERSONAL INFORMATION

## Balazs Brem

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Sex Male | Date of birth 23 February 1987 | Nationality Romanian

27 February 2017-

## Assistant Professor

Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Cluj Napoca (Romania), Chemistry and Chemical Engineering Department

22 June 2016 –  
01 January 2017

## Production Statistician (Internship)

Saint-Gobain Construction Products Romania SRL  
RIGIPS Business Unit, Trascaului street nr 2, Turda (Romania)

## EDUCATION AND TRAINING

01 November 2014 –  
01 November 2015

## Doctoral (Sciex) Fellow

University of Neuchatel, Institute of Inorganic Chemistry, Neuchâtel (Switzerland)

**PDT "Synthesis of heteroaryl meso substituted porphyrins, and their coordination with ruthenium complexes."**

01 October 2011 –  
01 September 2015

## PhD student

Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Cluj- Napoca (Romania)

**"SYNTHESIS AND BIOLOGICAL ACTIVITY ASSESSMENTTS IN SERIES OF NEW PHENOTHIAZINE FUNCTIONALIZED HETEROAROMATIC COMPOUNDS"**

- 01 July 2013 – 01 September 2013 **SOE-DAAD Scholarship**  
University of Leipzig, Faculty of Chemistry and Minerology, Leipzig (Germany)
- 22 November 2012 – 22 December 2012 **SOE-DAAD Scholarship**  
University of Leipzig, Faculty of Chemistry and Minerology, Leipzig (Germany)
- 15 April 2011 – 01 July 2013 **Research Assistant**  
Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Cluj-Napoca (Romania)
- 20 November 2011 – 20 April 2012 **Erasmus Guest**  
Eötvös Loránd University, Faculty of Natural Sciences, Budapest (Hungary)
- Knowledge skills and competences to be acquired:  
-ECD spectroscopic studies of proteins and peptides.  
Models:  $\beta$ -turn and hairpin peptides, lactalbumin
- Preparation of dirhodium complexes of amino acids/dipeptides by in situ method:  
-monitoring the complexation by UV- and ECD spectroscopy  
- optimize the conditions of ECD measurement for the amide wavelength region: 190-300 nm
- analysis of the mixtures of complexes by HPLC
- Developing a separation methodology for the earlier, in situ method prepared dirhodium complexes: automat (Biotage) and normal flash chromatography, HPLC
- Structure analysis of the new, isolated dirhodium complexes: ECD, FTIR, VCD and/or studies of the in situ complex mixtures by FTIR spectroscopy
- 01 October 2009 – 01 July 2011 **Master's degree** EQF level 6  
Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Cluj Napoca (Romania)  
Organic and Biochemical Processes Engineering
- “THE SYNTHESIS OF NEW PHENOTHIAZINYL PORPHYRINS AND THEIR METAL(II) COMPLEXES”**
- 08 February 2010 – 08 August 2010 **Erasmus Scholarship**  
UNIVERSITY OF TECHNOLOGY AND ECONOMICS, Faculty of Chemistry, Budapest (Hungary)
- Knowledge skills and competences to be acquired:
- enzyme catalyzed kinetic resolution
  - preparative scale kinetic resolution
  - GC analyses were carried out on ACME 3000 instruments equipped with FID detector
- Enantiomer selective acylation of racemic thiophene- alcohols in discontinuous and continuous-flow bioreactors
- 01 October 2005 – 01 July 2009 **Bachelor of Science degree (ENGINEER)** EQF level 5  
Babes-Bolyai University, Faculty of Chemistry and Chemical Engineering, Cluj Napoca (Romania)  
Chemistry and Engineering of Organic Substances, Petrochemistry and Carbochemistry
- “SYNTHESIS AND STRUCTURAL ANALYSIS OF PHENOTHIAZINE CONTAINING KETONES”**
- 01 September 2001 – 01 July 2005 **High School Diploma** EQF level 3  
Teoretical High School Carei, Carei (Romania)

Mathematics and Informatics

## PERSONAL SKILLS

Mother tongue(s) Hungarian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	B1	B1	B2
Romanian	C1	C1	C1	C1	B2
German	A2	A2	A1	A2	A1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user  
[Common European Framework of Reference for Languages](#)

## Additional skills

- Proficient with PC's and many software packages including MS Word, Excel, PowerPoint, ChemDraw, Origin and others
- Skilled in organic synthesis, Glove-box and Schlenck techniques.
- Utilization of different methods for the characterization of organic compounds: NMR, HPLC, GC, UV and Fluorescence, FT- IR, Circular dichroism and mass spectroscopy.

Driving license: B

Attachments:

## Presentations:

### 1. THE SYNTHESIS OF NEW PHENOTHIAZINYL PORPHYRINS AND THEIR METAL(II) COMPLEXES

Workshop "From Molecules to Functionalised Materials", SOE-DAAD Workshop Skopje, Macedonia, 16-20 March 2011

### 2. PHENOTHIAZINE BASED DIPYRROMETHANES ACYLATION, AND SELECTIVE PURIFICATION WITH DIALKYL-TIN COMPLEXATION

Workshop "From Molecules to Functionalised Materials", SOE-DAAD Workshop Cluj Napoca, Romania, 8-11 October 2013

## Posters

### 1. SYNTHESIS AND STRUCTURAL ANALYSIS OF PHENOTHIAZINE CONTAINING KETONES

**Balázs Brém**, Anetta Láng, Tamás Lovász, Luminița Silaghi-Dumitrescu, Workshop "From Molecules to Functionalised Materials" - Cluj Napoca, Romania, October 2009

### 2. SYNTHESIS AND CHARACTERIZATION OF SOME NEW PORPHYRINS WITH PHENOTHIAZINE UNITS

**Brém Balázs**, Gál Emese, Lovász Tamás, Luminița Silaghi-Dumitrescu, Workshop "From Molecules to Functionalised Materials" - Cluj Napoca, Romania, October 13-18, 2010

### 3. KINETIC RESOLUTION OF SULFUR-CONTAINING SECONDARY ALCOHOLS IN BATCH AND CONTINUOUS-FLOW BIOREACTORS

Boros Zoltán, Hellner Gabriella, **Brém Balázs**, Zsóka Péter, Poppe László, *HCS 1. National Conference*, Sopron, Hungary, May 22-25, 2011

**4. STRUCTURAL ANALYSIS OF NEW PHENOTHIAZINYL-PORPHYRINS**

**B. Brém**, E. Gál, T. Lovász, L. Găină, L. Silaghi-Dumitrescu, *Advanced Spectroscopies on Biomedical and Nanostructured Systems BioNanoSpec-4* - Cluj Napoca, Romania, September 4-7, 2011

**5. FLUORESCENCE PROPERTIES OF NEW PHENOTHIAZINYL-PORPHYRINE DERIVATIVES**

E. Gál, **B. Brém**, L. Găină, T. Lovász, C. Cristea, L. Silaghi-Dumitrescu, *12th Conference on Methods and Applications of Fluorescence* - Strasbourg, France, September 11-14, 2011

**6. FIRST EXAMPLES OF MESO-PHENOTHIAZINYLDIPIRROMETHANE CONTAINING HOMOLEPTIC TRANSITION METAL COMPLEXES**

**B. Brém**, E. Gál, L. Găină, T. Lovász, L. Silaghi-Dumitrescu, XVIIIth International Conference on Chemistry – Oradea, Romania, November 22-25, 2012

**7. SYNTHESIS OF HETEROARYL MESO-SUBSTITUTED PORPHYRINS, AND THEIR COORDINATION WITH RUTHENIUM COMPLEXES**

B. Brém, L. Silaghi-Dumitrescu, B. Therrien, *SCS Laureates and Awards & Fall Meeting 2015*, Lusanne, Switzerland, September 5, 2015

**8. SYNTHESIS AND PHOTOPHYSICAL PROPERTIES OF A NEW DIMETHINE CYANINE DYE DERIVED FROM PHENOTHIAZINE**

**B. Brém**, L. Gaina, C. Cristea, XXIIIrd International Conference on Chemistry – Deva, Romania, October 25-28, 2017

**9. SYNTHESIS AND STRUCTURAL CHARACTERIZATION OF DIFLUOROBORON COMPLEXES**

B. Brém, E. Gál, L. Gaina, C. Cristea, XXIVth International Conference on Chemistry – Sovata Bai, Romania, October 24-27, 2018

**10. SYNTHESIS OF HETEROARYL MESO -SUBSTITUTED PORPHYRINS, AND THEIR COORDINATION WITH RUTHENIUM COMPLEXES**

B. Brém, L. Silaghi-Dumitrescu, B. Therrien, XXVth International Conference on Chemistry – Cluj Napoca, October 24-26, 2019

## Publicated scientific articles:

1. *A “yellow” laccase with “blue” spectroscopic features, from Sclerotinia sclerotiorum*, Augustin C. Moț, Marcel Pârvu, Grigore Damianc, Zsuzsanna Darulad, Katalin F. Medzihradskyd, Balazs Brem, Radu Silaghi-Dumitrescu, *Process Biochemistry*, 2012, 47(6), 968–975;
2. *Dirhodium complexes: determination of absolute configuration by the exciton chirality method using VCD spectroscopy*, Gábor Szilvágyi, Balázs Brém, Gábor Băti, László Tölgyesi, Miklós Hollósi, Elemér Vass, *Dalton Trans.*, 2013, 42, 13137–13144;
3. *Novel meso-phenothiazinylporphyrin dyes: Synthesis, optical, electrochemical properties and PDT assay*, Emese Gal, Balazs Brem, Iani Pereteanu, Luiza Gaina, Tamas Lovasz, Maria Perde-Schrepler, Laura Silaghi-Dumitrescu, Castelia Cristea, Luminita Silaghi-Dumitrescu, *Dyes and Pigments*, 2013, 99, 144-153;
4. *Assessments of electronic properties in phenothiazine carbaldehyde regioisomers series*, B. Brém, E. Gál, C. Cristea, L. Găină, L. Silaghi-Dumitrescu, *STUDIA UBB CHEMIA*, 2015, 60(2), 271-279;
5. *Synthesis of new benzothiazolyl-phenothiazine derivatives*, B. Brém, E. Gál, C. Cristea, A. Grozav, V. Zaharia, L. Găină, L. Silaghi-Dumitrescu, *STUDIA UBB CHEMIA*, 2015, 60(2), 361-369;
6. *Synthesis of Novel(Phenothiazinyl)Dipyrrolymethanes*, B. Brém, E. Gál, L. Găină, C. Cristea, L. Silaghi-Dumitrescu, *Rev. Roum. Chim.*, 2014, 59(11-12), 949-952;
7. *Metallo complexes of Meso-Phenothiazinylporphyrins-two photon active chromophores*, B. Brém, E. Gál, L. Găină, C. Cristea, A. M. Gabudean, S. Astilean, L. Silaghi-Dumitrescu, *Dyes and Pygments*, 2015, 123, 386-395;
8. *Novel 1,9-diacyl-5- (phenothiazinyl)dipyrromethane dialkyltin complexes*, C. Cristea, B. Brém, E. Gál, L. I. Găină, T. Lovász, A. E. Molnár, D. I. Porumb, *Studia Universitatis Babes-Bolyai, Seria Chemia*, 2016, 61(3), 73-80;
9. *Novel Thiazolo[5,4-b]phenothiazine Derivatives: Synthesis, Structural Characterization, and In Vitro Evaluation of Antiproliferative Activity against Human Leukaemia*, B. Brém, E. Gál, L. Găină, L. Silaghi-Dumitrescu, E. Fischer Fodor, C. Tomuleasa, A. Grozav, V. Zaharia, L. Filip, C. E. Cristea, *International Journal of Molecular Sciences*, 2017, 18, 1365-13178;
10. *(Phenothiazinyl)Vinyl-Indolium Cationic Dyes*, B. Brém, Q. Colange, E. Gál, D. I. Porumb, C. Cristea, L. Găină, T. Lovász, L. Silaghi-Dumitrescu, *Studia Universitatis Babes-Bolyai, Seria Chemia*, 2018, 63(2), 117-123;

11. ***Evaluation of Press Mud, Vinasse Powder and Extraction Sludge with Ethanol in a Pyrolysis Process***, J. S. Devia-Orjuela, C. E. Alvarez-Pugliese, D. Donneys-Victoria, N. M. Cabrales, L. E. Barba Ho, B. Brém, A. Sauciuc, E. Gál, D. Espin, M. Schichtel, D. Lang, S. Giardinelli, M. Briceno, *Energies*, **2019**, 12, 4145-4166;
12. ***Optical properties modulation of cyanine dyes in organic solvents and in the critical intracellular pH window***, R. Sisa, B. Brem, E. Gal, L. Găina, D. I. Porumb, C. Cristea, L. Silaghi-Dumitrescu, *STUDIA UBB CHEMIA*, **2019**, LXIV, 2, Tom II, 547-553
13. ***Heterocycles 47. Synthesis, characterization and biological evaluation of some new thiazole aurones as antiproliferative agents***, F. M. Coman, A. T. Mbaveng, G. Marc, D. Leonte, B. Brém, L. Vlase, S. Imre, V. Kuete, V. Zaharia, *FARMACIA*, **2020**, 68(3), 492-506;